

no little value in practical agronomic tests. But he is not prepared to accept the author's idea that the proposed method affords a reliable means of "measuring the effect of crossing apart from other factors that influence yield." The method does not afford a comparison between the hereditary yielding power (effect of genetic factors influencing yield) on the one hand, and on the other the effect of these same genetic factors plus the effect of crossing (heterozygosis?). Since pronounced individual diversity exists in all ordinary maize varieties, the comparison offered is in reality between (1) the effect of certain genetic factors plus the effect of crossing between somewhat unlike individuals (an unknown degree of heterozygosis ?), and (2) the effect of the same genetic factors plus the effect of crossing between individuals presumably, though not necessarily, more unlike (a presumably considerable though wholly unknown degree of heterozygosis ?).—R. A. EMERSON.

Aspen in reforestation.—Experimental evidence is presented by PEARSON¹¹ of the extent to which the aspen assists in reforestation by promoting the vigor of conifer seedlings. The experiments were conducted by comparing the survival and condition of young Douglas fir (*Pseudotsuga Douglasii*) planted on similar areas with and without aspen cover, the results being decidedly better in the former localities. Measurements of the evaporating power of the air in the two situations show it to be decidedly less among the aspens, and to this is ascribed the better success of the young Douglas firs. Data upon soil moisture are less convincing, particularly from the absence of any constant, such as the wilting coefficient, to determine the availability of the moisture which is present. Incidentally, attention is directed to the importance of vegetative reproduction in the establishment of the aspens.—GEO. D. FULLER.

Sporophyte of liverworts.—Using the sporophyte of Hepaticae as a basis of classification, DOUIN¹² would make three groups as follows: those with the sporophyte reduced to a capsule (Ricciales); those with foot and capsule only (Anthocerotales); and those with foot, seta, and capsule (all of the rest of the liverworts). Although regarding the Anthocerotales as a very natural group, he objects strongly to making them coordinate with Hepaticae and Musci. The reviewer's recent studies of Mexican and Polynesian Anthocerotales, especially a form from Samoa, most emphatically bear out DOUIN's view. DOUIN concludes that the Jungermanniaceae Acrogynae, although now divided very artificially by various writers, are a far more natural assemblage than are the Anacrogynae, which as now arranged are the most artificial assemblage among Hepaticae.—W. J. G. LAND.

¹¹ PEARSON, G. A., The rôle of the aspen in the reforestation of the mountain burns in Arizona and New Mexico. *Plant World* 17:249-260. 1914.

¹² DOUIN, ROBERT, Le sporophyte chez les Hépatiques. *Rev. Gén. Botanique* 24: 403-413, 453-463. *pls.* 18-21. 1912.